

IN THE CLAIMS

Please cancel claims 6, 9, 13, 20, 23, and 26-27 without prejudice.

Please amend the following of the claims which are pending in the present application:

1. (Previously presented) A method of actuating, comprising:
filling at least a portion of a tube with a liquid containing electrolytes, the tube having an open end and an inner surface that is electrically chargeable when in contact with the liquid;
positioning an object in fluid communication with the liquid in the tube through the open end; and
applying an electrical field along a lengthwise axis across the tube at said portion for producing a pressure in the liquid;
wherein the pressure in the liquid exerts a force on the object so as to actuate the object.
2. (Previously presented) The method of claim 1, wherein the inner surface is electrically chargeable due to electrochemical phenomena.
3. (Currently amended) The method of claim 1 ~~or claim 2~~, wherein the tube is selected from the group comprising: capillary tube and micro-capillary tube.

4. (Currently amended) The method of ~~any one of claims~~ claim 1 [[to 3]], further including an additional plurality of tubes each at least partially filled with a liquid containing electrolytes in fluid communication with the object.

5. (Currently amended) The method of claim 4, wherein the plurality of tubes are formed in a porous material, the porous material being made from at least one material selected from the group consisting of: silica, and ceramics.

6. (Cancelled)

7. (Currently amended) The method of claim ~~[[6]]~~ 5, wherein the porous material has at least one material property selected from the group consisting of: electrically non-conductive, porous structure, micro capillaries, small particles, and hydrophilic.

8. (Currently amended) The method of ~~any one of claims~~ claim 1 [[to 7]], wherein the electric field is generated from a power supply selected from the group consisting of: AC and DC, the DC power supply being linked to an on-off frequency controller.

9. (Cancelled)

10. (Currently amended) The method of ~~any one of claims~~ claim 1 [[to 9]], wherein the pressure in the liquid is caused by electroosmotic flow.
11. (Previously presented) The method of claim 5, wherein a higher force on the object is generated by adopting techniques selected from the group comprising: using porous material with small pore sizes and using porous material with large cross-sectional areas.
12. (Currently amended) The method of claim 1, wherein a higher force on the object is attained by at least one selected from the group consisting of: using a lower concentration of the liquid containing electrolytes, and generating a stronger electric field.
13. (Cancelled)
14. (Currently amended) The method as claimed in ~~any one of claims~~ claim 1 [[to 12]] when as used in an actuator.
15. (Previously presented) An actuator comprising:
a tube with an open end and an inner surface and at least partially filled with a liquid containing an electrolyte, the inner surface being electrically chargeable when in contact with the liquid;

an electric field generator for generating a field along a lengthwise axis of the tube to induce a pressure in the liquid;

an object in fluid communication with the liquid in the tube through the open end such that the pressure in the liquid exerts a force on the object;

and wherein the force on the object is able to actuate the object.

16. (Previously presented) The actuator of claim 15, wherein the inner surface is electrically chargeable due to electrochemical phenomena.

17. (Currently amended) The actuator of claim 15 ~~or claim 16~~, wherein the tube is selected from the group consisting of: capillary tube and micro-capillary tube.

18. (Currently amended) The actuator of ~~any one of claims~~ claim 15 [[to 17]], further ~~including~~ comprising an additional plurality of tubes each at least partially filled with a liquid in fluid communication with the object, the liquid containing electrolytes ~~in fluid communication with the object~~.

19. (Currently amended) The actuator of claim 18, wherein the plurality of tubes [[are]] is formed in a porous material, the porous material being at least one material selected from the group consisting of: silica, and ceramics.

20. (Cancelled)

21. (Currently amended) The actuator of claim 19, wherein the porous material has at least one material property selected from the group consisting of: electrically non-conductive, porous structure, micro capillaries, small particles, and hydrophilic.

22. (Currently amended) The actuator of ~~any one of claims~~ claim 15 [[to 21]], wherein the electric field generator generates power supplies selected from the group consisting of: AC and DC, the DC power supply being linked to an on-off frequency controller.

23. (Cancelled)

24. (Currently amended) The actuator of ~~any one of claims~~ claim 15 [[to 23]], wherein the pressure in the liquid is caused by electroosmotic flow.

25. (Currently amended) The actuator of claim 19, wherein a higher force on the object is generated by adopting techniques selected from the group consisting of: using porous material with small pore sizes, [[and]] using porous material with large cross-sectional areas, using a lower concentration of the liquid containing electrolytes, and generating a stronger electric field.

26-27. (Cancelled)

28. (Currently amended) The actuator of ~~any one of claims~~ claim 15 [[to 27]], further comprising a housing defining a chamber containing the tube, and a cylinder in fluid communication with the chamber, wherein the tube is in the cylinder and the object is a piston slideably mounted in the cylinder.

29. (Previously presented) The actuator of claim 28, wherein the piston is biased to resist a force exerted thereon from the tube.

30. (Previously presented) The actuator of claim 29, further comprising a displacement amplifier operatively connected to the piston.

31. (Previously presented) The actuator of claim 28, wherein the piston has silicone seals.

32. (Currently amended) The actuator of ~~claim any one of claims 19 to 21, or any one of claims 22 to 25 when appended to~~ claim 19, further comprising a compensating piston to prevent a drop of pressure in the porous material.

33. (Previously presented) The actuator of claim 28, further comprising a vent in the housing for allowing the exchange of air within the chamber.

34-35. (Cancelled)